

TECHNICAL MANUAL

**DEPOT MAINTENANCE OF AEROSPACE VEHICLES AND
TRAINING EQUIPMENT**

(ATOS)

FOR QUESTIONS CONCERNING TECHNICAL CONTENT OF THIS TECHNICAL MANUAL, CONTACT HQ AFMC/ENBA.

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INTRODUCTION

1. PURPOSE.

This technical order outlines the types and scope of depot maintenance support, and establishes procedures for programming aerospace vehicles and training equipment for depot maintenance. The provisions of this technical order (TO) are applicable to all Air Force (AF), Air National Guard (ANG) and Air Force Reserve Command (AFRC) activities. The AFMC Single Manager (SM) includes System Program Directors (SPDs), Product Group Managers (PGMs) and Materiel Group Managers (MGMs).

2. SCOPE.

The tables and intervals listed are those which the assigned System Program Director (SPD) has determined are valid. All recommended additions/deletions/changes from other activities must be submitted by memorandum directly to the SPD. Do not use the AFTO FORM 22 system.

CHAPTER 1

GENERAL

1.1 GENERAL POLICY.

AFI 21-101 and 21-102 establish the objectives, policies, and responsibilities for the Air Force equipment maintenance program. The policies pertinent to maintenance support are as follows:

1.1.1 The maintenance engineering objective is to assure that the best, most timely, and most economical means, consistent with mission requirement, are used to satisfy all approved requirements. The criteria used for meeting this objective will include comparative analysis of costs and benefits to the owning activity.

1.1.2 AFMC is responsible for management of the USAF depot maintenance program for aerospace vehicles and training equipment. The AFMC Single Manager is responsible for planning the depot maintenance program. Within AFMC, equipment specialists and item managers will reference the tables of this TO for assistance in determining the overall quantities of exchangeable assets.

1.1.3 Depot maintenance for aerospace vehicles and training equipment will be provided to MAJCOMs (ACC, AFSOC, AMC, ANG, AFRC, AFSPC, PACAF, AETC, AFMC, USAFE) that have received funds or direct appropriations for depot maintenance. Depot funds therefore involve a variety of appropriations, budget programs and program elements. The commands will provide ALC/SM with the appropriate funds citation and certification of funds availability.

1.1.4 The depot maintenance program will be based on data from Reliability Centered Maintenance programs (Maintenance Program Development Document), the Maintenance Data Documentation (MDD) system, requirements submitted by owning activities and other reliability and maintenance data sources. Except for unprogrammed emergency requirements, depot maintenance will be accomplished on a planned basis to facilitate the programming of funds, material, man-power, facilities and other resources. On mature aircraft with extensive operational and maintenance history, the SPD engineering functions may direct inspection requirements based on force experience without formal RCM analysis.

1.1.5 Field team accomplishment of depot maintenance is warranted when it will reduce the aerospace vehicle out of service time, impact the mission accomplishment of tactical units less than if the maintenance is accomplished in a fixed facility, or be advantageous to the government.

1.1.6 When a requirement exists to input a missile into a TRC or when on-site programmed maintenance and modification is required, the maintaining commands and the SPD, will develop the work package and schedule. When appropriate, the AFTO FORM 103, AIRCRAFT/MISSILE CONDITION DATA, will be used as outlined in paragraph 1.4.3.

1.1.7 Depot maintenance of training equipment is restricted to essential repair required to keep "T" coded aircraft, missiles, and Federal Supply Group (FSG) 69 training equipment in serviceable condition for training purposes. If required, field teams will be dispatched to accomplish major modifications. If materiel resources are provided and technical skills exist, modification of trainers may be accomplished by operational units if jointly agreed to by AFMC and MAJCOM involved. Owing activities will advise Ogden ALC and the appropriate ALC/SPD for maintenance training equipment of the date depot maintenance support is required. The required work will be accomplished by field teams of the TRC in accordance with TO 43-1-1.

1.1.8 Depot possessed aircraft may be considered a source for parts based on the cannibalization criteria contained in TO 00-20-2. Prior to the arrival of a depot team at the repair site, request for cannibalization approval will be initiated by the unit Group Commander (Logistic, Operations, Test, etc.) and sent to the weapon SPD with an information copy to the MAJCOM/Maintenance/Supply Activities. The SPD will act on each request after considering what impact cannibalization action will have on depot field team maintenance requirements. When the SPD has delegated cannibalization approval authority to the onsite depot field team chief, the LG will seek approval directly from the team chief. The depot field team is not responsible for replacing the cannibalized items prior to transferring aircraft possession back to operational unit.

1.2 DEFINITION OF TERMS.

1.2.1 Aircraft Structural Integrity Program (ASIP) (MIL HDBK-15310). A time-phased set of required actions performed at the optimum time during the life cycle (design through phase-out) of an aircraft system to ensure the structural integrity (strength, rigidity, damage tolerance, durability and service life capability) of the aircraft. The results of the ASIP, i.e., fatigue

analysis, damage tolerance assessment, fatigue test results, individual aircraft tracking program, etc., are used in the RCM analysis of structurally significant items. These analyses and tests identify critical areas, inspection tasks, and frequencies.

1.2.2 Analytical Condition Inspection (ACI) AFMCI 21-102. The systematic disassembly and inspection of a representative sample of aircraft to find hidden defects, deteriorating conditions, corrosion, fatigue, overstress, and other deficiencies in the aircraft structure or systems. ACIs are normally over and above those inspections specified in the technical order or PDM work specifications.

1.2.3 Airframe Condition Evaluation (ACE). ACE generates deficiency data for engineering and technical evaluation of the relative aircraft condition resulting from corrosion, overstress, wear, and other effects of age, operational usage, and environmental exposure. ACE is normally performed by a Depot Field Team (DFT) or Contract Field Team (CFT). Under this program, aircraft receive a special structural maintenance evaluation that cannot be accomplished at organizational and intermediate level. This evaluation looks for symptoms of distress to develop a physical condition profile which is then used to establish the depot level threshold for on condition maintenance (OCM). The ACE selects those aircraft eligible for depot level maintenance and identifies the OCM tasks.

1.2.4 Controlled Interval Inspection (CIE) AFMCI 21-104. The controlled extension of a programmed depot maintenance interval based on condition analyses of a representative sample of aircraft.

1.2.5 Depot Facility or Source of Repair Activity. An industrial type facility established to perform accessory overhaul functions, modifications or maintenance. This includes AFMC installations and commercial contractors who perform depot work on weapon systems or equipment under a contract issued and managed by AFMC.

1.2.6 Depot Field Team. A team of maintenance personnel (AF, another service, contractor, or a combination thereof) possessing the necessary skills, special tools and equipment to accomplish depot level modification and maintenance.

1.2.7 Depot-Level Maintenance. The level of maintenance consisting of those on and off-equipment tasks performed using highly specialized skills, sophisticated shop equipment, or special facilities of an ALC, centralized repair activity, contractor facility, or, by field teams at an operating location. Maintenance performed at a depot also includes those organizational- and intermediate-level tasks required to prepare for depot maintenance, and, if negotiated between the depot and the operating command, scheduled field-level inspections, preventative maintenance or TCTOs which come due while equipment is at the ALC for PDM.

1.2.8 Excepted Aircraft. Those aircraft not requiring force wide scheduling for depot level modification or maintenance.

1.2.9 Failure Modes, Effects and Criticality Analysis (FMECA). An analysis performed to identify the predicted failure modes of an item and the effect each failure mode has upon the item, system, and end item operation.

1.2.10 Item Manager (IM). An individual who is assigned management responsibility for one or more specific items of hardware.

1.2.11 Maintenance Requirements Review Board (MRRB). An Air Force panel that assures all valid depot level maintenance requirements are evaluated and scheduled for appropriate fiscal year accomplishment. The process for this assurance involves an annual on-site review of the proposed maintenance program for each weapon system to assess the depot interval, the time in depot (flow days), and the validity of each detailed task in the work package. The panel is comprised of Air Force Staff and using command representatives and AFMC engineering and aircraft maintenance experts. Changes to an approved maintenance program must be submitted with complete justification to the MRRB prior to incorporation in the work package and submission for funding. MRRBs are convened at the Air Logistics Center and major command levels.

1.2.12 Maintenance Program Development Document (MPDD). This document was prepared by the Maintenance Steering Group-3 task force of the Air Transport Association of America. This document describes an analytical process for establishing scheduled maintenance requirements for commercial aircraft. This document can also be found online as appendix 5 of the FAA's Airworthiness Inspector's Handbook 8300.

1.2.13 Materiel Group Manager (MGM). The single manager for a Materiel Group, who has the same responsibilities as a System Program Director or Product Group Manager for the assigned materiel.

1.2.14 On Condition Maintenance (OCM). OCM is a program to schedule selected aircraft into a depot level facility to correct known specific defects. Selection is based on combinations of critical and multiple major defects. Critical defects are significant faults on primary structure. Major defects are significant faults to secondary structure. OCM is selected so that contracted corrective action can be tailored to known, specific aircraft needs as a result of the ACE program.

1.2.15 Product Group Manager (PGM). The single manager for a Product Group, who has the same responsibilities as a System Program Director or Materiel Group Manager for the assigned products.

1.2.16 Reliability-Centered Maintenance AFMCI 21-103. A maintenance concept that has the objective of achieving the inherent, or designed-in, reliability of a system. The concept is a derivative of the airline/manufacture maintenance planning document MSG published under the auspices of the Air Transport Association.

1.2.17 Reliability-Centered Maintenance Analysis AFMCI 21-103. A structured approach to the development of an RCM concept for a system or end item. It uses FMECA and integrity program outputs and MPPD logic to identify maintenance tasks which must be performed on a scheduled basis to ensure the attainment of inherent reliability.

1.2.18 Modification. A physical alteration of equipment that changes its capabilities or characteristics, i.e., form, fit or function.

1.2.19 Programmed Depot Maintenance (PDM). Inspection and correction of defects that require skills, equipment or facilities not normally possessed by operating locations.

1.2.20 Sectionalized Work Requirements Package. The aircraft depot work package developed to identify the maintenance and/or modification, sectionalized by categories of tasks, to be done on aircraft or equipment being input to a source of repair.

1.2.21 Single Manager (SM). The SPD, PGM or MGM in charge of a weapon/military system, product group, or materiel group.

1.2.22 Source of Repair (SOR). An industrial complex (organic, commercial contract, or interservice facility) with required technical capabilities to accomplish depot repair, overhaul modification, or restoration of specific types of military hardware or software.

1.2.23 Speedline. The programming of a specific group of aircraft for the accomplishment of specific maintenance tasks or modifications that do not constitute a complete PDM package.

1.2.24 System Program Director (SPD). The individual in an AFMC System Program Office (SPO) who is ultimately responsible and accountable for decisions and resources in overall program execution. The single face to the user who oversees the seamless process. SPD is the designated title for the single manager of a program who reports to a Program Executive Officer (PEO) or Designated Acquisition Commander (DAC).

1.2.25 Technology Repair Center (TRC). A functional entity with an AFMC source of repair activity which accomplishes depot level maintenance on a specific group of items.

1.2.26 Training Equipment. Aircraft, missile and other training equipment in FSG 69; trainers that are part of a Mobile Training Set (MTS) or Resident Training Equipment (RTE). Training equipment includes all trainers reportable in accordance with AFI 21-103 (Equipment Inventory, Status, and Utilization Reporting).

1.2.27 Safety of Flight (SOF). A SOF write-up indicates that the weapon system or equipment unit is considered unsafe or unfit for flight or use and that the weapon system will not be flown or the equipment used until the unsatisfactory condition is corrected.

1.3 TABLES.

Table 1-1, Table 1-2, Table 1-3, and Table 1-4 indicate the basis upon which the various mission design series (MDS) aerospace vehicles will be scheduled for depot modification and maintenance. If technical or operational considerations warrant development of a program that deviates from the published tables or intervals specified in the following sub paragraphs, approval can be granted by the assigned SPD. The SPD has the technical expertise and authority to determine if a PDM can be safely extended. If aircraft are scheduled for active inventory phase out, the proper SPD does an analysis to find options for minimizing aircraft force PDM needs. A mandatory option the analysis addresses is a proposal of aircraft transfer within or between major commands, when cost-effective, without degrading mission performance. As a result of the analysis, the SPD provides all options minimizing PDM needs for programmatic concurrence by the AF MRRB. Concurrences will be forwarded to HQ USAF/ILM for review.

1.3.1 Table 1-1 lists aircraft scheduled on the basis of modification accomplishment rather than on a time cycle basis. Table 1-1 applies when modification priorities and availability of kits or facilities are incompatible with calendar cycle PDM scheduling.

1.3.2 [Table 1-2](#) lists aircraft scheduled for PDM on a cyclic interval with the cycle time stated in months. The PDM interval is measured from the output date of the last PDM to the input date of the next due PDM. Supportable depot modifications will be completed concurrently with PDM when feasible. To assist in scheduling PDM input, up to a 90-day plus or minus variance from the PDM due date is allowed. An aircraft is considered due PDM when the cycle time shown in [Table 1-2](#) has been reached. A red dash will be entered in the aircraft forms on the PDM due date. When the PDM due date plus 90 days passes, the red dash will be upgraded to a red X. If extensions beyond 90 days are required for operational reasons, SPD approval is required. The operating unit shall request extension through MAJCOM headquarters to the aircraft SPD. The SPD will direct special inspections (usually contained in the -6 Scheduled Inspection and Maintenance Requirements T.O.), define when the inspections must be completed before system removal from service, and the period allowed after accomplishment before the PDM becomes mandatory. At 180 days past PDM due date, the aircraft will be placed on a red X symbol. The red X will only be downgraded for a one-time flight to the depot facility. The time allowed after accomplishment of the special inspections shall not exceed 180 days past PDM due date. Information copies of extension requests approved by the SPD shall be routed to the AF MRRB and HQ USAF/ILM. Exceptions to this policy are allowed for aircraft in the CIE program and for special project aircraft. All CIE aircraft must be identified by serial number. Extensions on special project and CIE aircraft must be forwarded to the SPD. The SPD shall insure airworthiness and safety are maintained throughout the CIE program or Special Project.

1.3.3 [Table 1-3](#) lists aircraft not contained in [Table 1-1](#) and [Table 1-2](#). These aircraft are exempt from force wide scheduling for these reasons:

1.3.3.1 The aircraft can normally be fully maintained by the owning activity.

1.3.3.2 Depot maintenance requirements are determined by the condition of individual aircraft rather than the force as a whole.

1.3.3.3 Aircraft condition warrants establishing special procedures for providing required depot maintenance and modification. When depot level maintenance or modification requirements exist for aircraft in [Table 1-3](#), the SPD in conjunction with the owning activity will program and schedule the work to be accomplished.

1.3.4 Fiscal year programs for depot maintenance of aircraft are developed in accordance with [Table 1-1](#), [Table 1-2](#) and [Table 1-3](#). The tables will be revised when warranted, based on SPD analysis of:

1.3.4.1 Data from RCM programs (MSG-3).

1.3.4.2 ACI data.

1.3.4.3 CIE program data.

1.3.4.4 Findings of previous depot work.

1.3.4.5 ASIP data.

1.3.4.6 Modification requirements.

1.3.4.7 Maintenance data documentation.

1.3.4.8 Materiel deficiency reports.

1.3.4.9 Inquiry. The SPD may ask commands to provide data to statistically assess the prevalence of a suspected condition in the force. This pertains to items that will not adversely impact upon the owning activity operational mission and that can easily be verified during regularly scheduled inspection at the operating location.

1.3.5 [Table 1-4](#) lists those AF aircraft designated to comply with civil airworthiness standards in accordance with AFD 62-4 (Standards of Airworthiness for Passenger Carrying Commercial Derivative Transport Aircraft), AFD 62-5 (Standards of Airworthiness for Commercial Derivative Hybrid Aircraft), and AFI 21-107 (Maintaining Commercial Derivative Aircraft). These Commercial/Derivative aircraft were delivered to the AF in compliance with civil airworthiness standards set by the FAA. AF policy is to maintain these aircraft as closely as possible to the same airworthiness standards. The SPD will use only FAA-certified contractors for contract depot maintenance of commercial derivative aircraft. The SPD will use the original equipment manufacturers maintenance procedures to meet FAA maintenance requirements. Therefore, these aircraft are exempt from the requirements of the CIE and ACI programs.

1.4 DEVELOPMENT OF AIRCRAFT REQUIREMENTS.

1.4.1 The SPD, in coordination with owning activities, will determine depot maintenance requirements for the next fiscal year and forecast depot maintenance requirements for subsequent two subsequent fiscal years. Prior to AF MRRB review, the SPD will develop a sectionalized work requirements package of maintenance and modification requirements by mission design aircraft (or series within a mission design) in accordance with [Table 1-5](#). The sectionalized work requirements package, provided to owning activity by the SPD, will conform to the criteria for depot accomplishment and will include operational checks and/or functional check flight (FCF) in accordance with TO 1-1-300. The sectionalized work requirements package should not be changed during the execution year program except for changes affecting safety of flight (SOF), or mission essential requirements. The SPD is responsible for a critical review of all work such as the following prior to inclusion in the sectionalized work requirements package.

1.4.1.1 Items of maintenance not directly associated with depot requirements can be included in the work package, but are subject to the guidelines in [Table 1-5](#). These tasks include safety of flight, economy maintenance/modifications and negotiated maintenance/modifications.

1.4.1.2 Engines damaged as a result of foreign object damage (FOD) and/or negligence while in possession of AFMC will be replaced by AFMC without impact upon the using command. Engines requiring return to overhaul for any reason other than stated above will have a replacement engine in Quick Engine Change (QEC) configuration furnished by the maintaining command.

1.4.1.3 Engine maintenance requirements are limited to those classed as economic repair (replacement of clamps, external lines, bolts on accessories, feathering of vanes, etc.) and the correction of SOF defects.

1.4.2 Prior to approval of a depot program by the AF MRRB, the owning activity can negotiate with the SPD for certain maintenance to be accomplished concurrent with PDM. These maintenance requirements include such items as supportable TCTOs and next due Periodic, Phase or Isochronal inspection (excluding engines). Those benefits to be realized by the owning activity will be identified to each task such as increases in mission readiness time or other tangible benefits. Documents of negotiation are exempt from Report Control Symbol (RCS) licensing in accordance with Chapter 2 of AFI 33-324 the Information Collections and Reports Management Program; Controlling, Internal, Public, and Interagency AF Information Collections. After the PDM program is approved by the AF MRRB the work specification is updated by the SPD if required. The SPD will furnish to each owning activity, by 1 July of each year or as soon as possible thereafter, a copy of the respective work specification for the fiscal year beginning 1 October of that year. Owning activities will provide copies of work specifications to their respective operating units.

1.4.3 Use of AFTO FORM 103 ([Figure 1-1](#)). The using activity will complete an AFTO FORM 103 PART A for each of their aircraft scheduled for input to depot maintenance. The using activity can list, after reviewing the depot work specification, in PART B those defects which are known to be or thought to be beyond their capability but are not included in the depot work package. (Some examples are: hidden corrosion, fuel leaks, structural damage or temporary repairs.) Outstanding TCTOs or depot maintenance requirements which are identified in the work specification will not be listed. Organizational maintenance and inspections may be identified for negotiations. The status of negotiated TCTO kits ([Table 1-5](#), section B.2) (kit not available, kit to be shipped with aircraft, kit to be mailed, etc.) can be listed. The form will be initiated 55 days in advance of the scheduled depot input date to allow for command review, certification and delivery of the form to the SPD 45 days prior to the scheduled date. The SPD will review the requirements listed on Part B of the form, approve or disapprove each item and will list the approved work in Part C of the form. The SPD will then forward the form to the Depot activity for pricing. The Depot activity will develop a cost estimate for each item in Part C of the form, and will return the form and the cost estimate to the SPD. The SPD will provide copies of the completed form and the cost estimate to the Owning Command OPR and the initiating activity 20 days prior to the scheduled input date of the aircraft for which the form was submitted. The Owning Command OPR will certify that additional funds are available for completion of the items listed on Part C of the Form. A supplemental AFTO FORM 103 can be submitted at the time of delivery of the aircraft to the depot facility, however, they should be limited to an essential need. The supplemental form will address depot requirements which have been found since submission of the original form or to reflect changes in the status of negotiated TCTO kits. The supplemental form will be initiated and forwarded to the depot activity with the aircraft records. The initiator will notify the owning activity/OPR and the SPD electronically before the aircraft departs for the depot facility. The notification will contain as a minimum the information in PART A, blocks 1, 2, 3, and 5, and the new information for PART B of the form. When supplemental forms are received by the depot facility, either the SPD will be notified or a copy will be given to the SPD representative for planning purposes. However, no work listed will begin until approved by the SPD. The SPD, after coordination with the Owning Activity/OPR, will notify either the depot facility or the SPD representative, who will notify the depot facility of work that is approved. Either the depot facility or the SPD representative will forward a copy of the supplemental form to the SPD who will annotate the form as to what work was approved and forward copies of the

completed forms to the owning activity/OPR and the using activity. When an originally scheduled aircraft is unable to be delivered, a substitute serial numbered aircraft can be input, providing the serial number is approved by both the owning activity and the SPD. The initial approval may be obtained by telephone, and confirmed electronically. If an AFTO FORM 103 has not been submitted for the substitute serial number, the procedures for supplemental forms will be followed. The AFTO FORM 103, including attachments, is exempt from RCS under the provisions of AFI 37-124.

1.5 INPUT AND OUTPUT SCHEDULES.

The SPD, in coordination with the owning activity, will develop input/output schedules for DM/PDM. The using commands will insure that sufficient aircraft are retained in order to accomplish their overall mission assignments while satisfying the planned DM/PDM schedules.

1.5.1 The priority with which individual aircraft will be scheduled for DM/PDM will be based on the DM/PDM due date and the estimated condition. This will assure that aircraft which urgently need DM/PDM are scheduled first. The SPD will notify the owning activity of the location of the SOR to which the aircraft is to be delivered at least 90 days before the delivery date. Deviation to programmed delivery dates (input and output) will be by mutual agreement of the owning activity and the SPD. Transfer of possession of aircraft will be established and reported in accordance with AFI 21-103. Phased retirement of a mission design series (MDS) from the active inventory extending over a period of several years affects the fiscal year quantities to be programmed and the individual aircraft to be scheduled for DM/PDM.

1.5.2 Aircraft programmed to be dropped from the active inventory within two years will not be scheduled for PDM. Advance identification of these aircraft, by serial number and fiscal quarter, will be coordinated between the owning activity and the SPD, to assure proper programming and scheduling. If the aircraft are to be stored at the Aerospace Maintenance and Regeneration Center (AMARC), the SPD will arrange storage IAW T.O. 1-1-686 and AFMCI 21-123.

1.6 CONTROLLED INTERVAL EXTENSION (CIE) PROGRAM.

The objective of this program is to establish controlled conditions to determine the feasibility for extending or reducing maintenance and inspections intervals without sacrificing safety of flight or reliability.

1.6.1 A CIE program is applicable to aircraft listed in [Table 1-2](#), when a particular system has been identified and recommended for a controlled interval adjustment by MRRB process. If the SPD review of data obtained from a given CIE program, correlated to ACI and/or ASIP program data, indicate that further interval extension is not feasible, this data will be presented to AF MRRB for approval to terminate the CIE program. The SPDs shall periodically review and evaluate current PDM programs to determine whether or not the current interval is optimal. This action shall be accomplished within the bounds of this technical order and AFMCI 21-104. Any recommended changes resulting from this review and evaluation must be approved by the AF MRRB.

1.6.2 The number of aircraft within each MDS to be included in the CIE program will be identified by the SPD and affected owning activity using the CIE sample size in [Table 1-6](#), as the basis for selecting quantity of aircraft. In determining the total force size for a specific aircraft by MDS, deduct from the total inventory all aircraft of that MDS in storage at the Aerospace Maintenance and Regeneration Center (AMARC), those aircraft on bailment or loan to other services or government agencies, and foreign country aircraft supported under international logistics programs. The aircraft selected for the CIE program will be programmed to exceed the normal PDM calendar time cycle authorized in [Table 1-2](#). At the end of the CIE period, each aircraft will be scheduled for PDM and a sample of CIE aircraft will be scheduled for an ACI. The data obtained will be analyzed and used in establishing inspection requirements and PDM intervals.

1.7 ANALYTICAL CONDITION INSPECTION (ACI).

ACIs are in-depth condition inspections accomplished on a representative sample of MDS aircraft to uncover hidden defects that are not detectable through normal inspection programs. ACIs generate data for engineering and technical evaluation of the relative MDS aircraft condition resulting from corrosion, overstress, wear and other effects caused by aircraft age, operational usage and environmental exposure. Adequate nondestructive inspection techniques will be used to insure that the types and sizes of flaws suspected to be found can be reliably detected. The owning activity will be informed of their specific aircraft's ACI findings and actions taken or contemplated to correct deficiencies revealed through the ACIs.

1.7.1 All aircraft listed in [Table 1-1](#), [Table 1-2](#), and [Table 1-3](#) will be programmed for ACI by the SPD. The number of ACI aircraft will be determined using the ACI sample size table, [Table 1-7](#). If the SPD does not program the sample size quantity of MDS aircraft for ACI as specified in [Table 1-7](#), the rationale for this decision will be presented to the AF MRRB for review and approval. The primary sample size column indicates the quantity of aircraft to be inspected to isolate defects that exist in 20 percent or more of the force at a 90 percent confidence level. It should be noted that for small force sizes, up to 36

aircraft, the sample size was considered excessive to achieve the 90 percent confidence level. This reduces the confidence level for small forces to as low as 53 percent. It is recommended that highly suspect/critical areas be sampled at the 90 percent confidence level. It is possible to isolate the only defect that exists in the entire force. Once a major or critical defect is found, the secondary sample

column (Table 1-7) indicates the additional number of aircraft that must be inspected without finding another defect existence is below a 20 percent prevalence level. If these additional samples reveal another defect, then it can be assumed the defect exists in 20 percent or more of the force.

1.7.2 Table 1-1 and Table 1-2 and aircraft will have an ACI accomplished concurrent with the PDM/modification programs.

1.7.3 Table 1-3 aircraft ACIs may be accomplished at operational sites by depot or contract field teams or at contract or depot facilities. If accomplished at the operational sites, the ACI tasks related to suspect or critical areas should be accomplished concurrently with a scheduled maintenance inspection. PDM requirements or related intervals will be determined from analysis of maintenance data generated by ACI accomplishment on Table 1-3 aircraft.

1.7.4 Analysis of data generated by the ACI program will be used by the SPD in determining DM/PDM task requirements and intervals for aircraft still in initial acquisition.

1.7.5 ACI programs will be discontinued on aerospace vehicles scheduled for active inventory phase out.

Table 1-1. Modification

Aircraft scheduled on the basis of modification accomplishment rather than on a time cycle basis.

DESIGNATION
A-10
F-16

Table 1-2. Programmed Depot Maintenance

Aircraft scheduled on a calendar time cycle (in months) for depot maintenance. The listing of a basic mission design, includes all series and prefixes, unless otherwise indicated.

DESIGNATION	INTERVAL
<u>OC-ALC Aircraft:</u>	
B-1B	60
B-2	84
B-52	48
RC-135	36
OC-135, KC-135 assigned to Hickam AFB or NASA	48
KC-135 excluding a/c identified above	60*
C-135, C-135E, NKC-135, TC-135, WC-135	60*
E-3	54
<u>OO-ALC Aircraft:</u>	
<u>WR-ALC Aircraft:</u>	
C-130E/H (PACAF)	54

Table 1-2. Programmed Depot Maintenance - Continued

MC-130E, AC-130H	54
NC-130A, MC-130H, WC- 130H, MC-130P, AC-130U	60
LC-130H, HC-130N/P	69**/**
NC-130H, EC-130E, EC-130H, C-130E, C-130H	69***
C-130J, CC-130J, EC-130J, WC-130J	69***
C-141	60
C-5A	60
C-5B	84
F-15***	72

* Extension inspection at 44-51 months.

** Thirty (30) month Mid-interval inspection on ACC and AFRC HC-130N/P aircraft (Command Option).

*** Initial PDM not to exceed 180 months (15 Yrs) from aircraft acceptance date - (Aircraft Data Plate).

**** F-15E models cum E210 and up should begin PDM not later than 8 years from delivery, and thereafter maintain a 6 year cycle.

Table 1-3. Excepted Aircraft

DESIGNATION	DESIGNATION
C-17	H-60*
F-16	RQ-1*
F-22	T-37
F-117*	T-38
H-1*	T-39
H-53*	U-2*

*Indicates aircraft exempted from ACI

Table 1-4. Commercial Derivative Aircraft

Aircraft listed are maintained in compliance with FAA regulations. The System Program Director will use only FAA-certified contractors for contract depot maintenance of commercial derivative aircraft. The SPD can utilize the PDM concept or any other method to meet FAA approved maintenance requirements.

DESIGNATION		
C-9	C-38 A	T-41*
C-12*	C-40 B	T-43
C-18	C-41	VC-25
C-20	C-137	TG-3**
C-21*	E-4	TG-4**
C-22	E-8	TG-7**
C-26*	KC-10	TG-9**
C-32	T-1*	TG-10**

Table 1-4. Commercial Derivative Aircraft - Continued

C-37	T-3*	TG-11**
JPATS*	T-6*	

* These aircraft are maintained according to an FAA approved manufacturer's maintenance manual. This manual provides for the continuous inspection of critical components, thereby eliminating the need for programmed depot maintenance.

** Air Force Academy

Table 1-5. Sectionalized Work Requirements

AIRCRAFT BROCHURE SECTION SPECIFICATIONS

Maintenance Requirements Review Board (MRRB) Brochure Section Specifications contains the sectionalized work requirements identified to specific tasks with the associated man-hour requirement. All operations that are task specific are identified to the appropriate task section. Any exceptions or changes to the tasks detailed in section A.1 through section C.3 must be approved by the AF MRRB. Man-hour data are shown in DPSH. Disposition of MRRB brochures and related data will be in accordance with AFMAN 37-139, Table 21-5, Rule 16.

SECTION A. Programmed Depot Maintenance (DM) Interval Rationale.

- a. Section A.1. Current Maintenance Programs.
- b. Section A.2. Age Since Last PDM. Combine total aircraft quantities for both organic and contract PDMs.
- c. Section A.3. Aircraft Structural Integrity Program (ASIP), AFPD 63-10, AFI 63-1001, MIL-HDBK 1530. A time-phased set of required actions performed at the optimum time during the life cycle (design through phase-out) of an aircraft system to ensure the structural integrity (strength, rigidity, damage tolerance, durability and service life capability) of the aircraft.
- d. Section A.4. Reliability Centered Maintenance Program (RCM), AFMCI 21-103. A systematic logical approach which is taken to identify the most applicable and effective preventative maintenance task. The overall goal is to enable the equipment to perform to its inherent level of safety and operating reliability.
- e. Section A.5. Controlled Interval Extension Program (CIE), AFMCI 21-104. The controlled extension of a PDM interval based on condition analysis of a representative sample of aircraft. A CIE sample size table is shown in Table 1-6.
- f. Section A.6. Analytical Condition Inspection Program (ACI), AFMCI 21-102. The systematic disassembly and inspection of a representative sample of aircraft to find hidden defects, deteriorating conditions, corrosion, fatigue, overstress and other deficiencies in the aircraft structure or systems. ACIs are normally accomplished in addition to inspections specified in the T.O. or PDM work specifications. Primary and Secondary ACI Sample Sizes shown in Table 1-7.

When an ACI task is being recommended for inactivation, it will remain in the brochure with a zero occurrence factor- for the FY in review; the engineering recommendation narrative will state the reason for wanting to delete the task. The task should not be deleted until after the Air Force MRRB approval. The index note column will continue to show the title of the task and the brochure year in which the task was deleted.

SECTION B. Depot Work Requirements.

Table 1-5. Sectionalized Work Requirements - Continued**a. Section B.1. Depot Level Maintenance.**

1. Section B.1.A. Incoming Tasks. Tasks required to prepare the aircraft for entry into depot work include but are not limited to the following, post flight checks, disarming, securing munitions and explosives, defueling, system purging, washing, inventory of aircraft associated equipment, storage of equipment, preservation and towing of the aircraft to the point where initial PDM work begins. Incoming processing tasks will not extend beyond where the initial depot level work, as detailed in the work specification, begins. Entry of associated text in the task description is optional.

2. Section B.1.B Depot Tasks. Tasks requiring depot skills, equipment, tools, or facilities as supported by engineering/technical rationale. This category of work also includes open up, close up, Examination and Inventory (E&I, inspection and repair to maintain airworthiness, authorized routing of components, necessary system checks and required movement of aircraft. This category of work is considered complete upon entry of aircraft into flight test. Entry of associated text in the task description is mandatory to the extent necessary to justify the task.

When a depot task is being recommended for deletion, it will remain in the brochure with a (-zero occurrence factor-) for the FY in review; the engineering recommendation narrative will state the reason for wanting to delete the task. The task should not be deleted until after the AF MRRB approval. The index will continue to show the title of the task and the brochure year in which the task was deleted.

3. Section B.1.C. Economy Tasks. Field level maintenance and Time Compliance Technical Orders (TCTOs) done concurrently with PDM for economy reasons. Work of this type located in or adjacent to a DM requirement is strictly limited to those areas worked or opened up in support of tasks defined in section B.1.B. This category of work must be clearly identified and supported by specific detailed analysis of individual tasks and their relationship to the associated depot task. Entry of associated text in the description is mandatory.

4. Section B.1.D. Flight Safety Tasks. These tasks include correction of Flight Safety TCTOs that become known while the aircraft is in the depot facility and those time change/calendar inspections that come due. This type of task, if not covered by the work specification, will be classified as over and above. Entry of associated text in the task description is optional.

5. Section B.1.E. Over and Above Tasks. These are low frequency items or work that is not called out in the work specification or project directive or covered under economy or flight safety tasks. These items of work will only be done to correct a critical or major deficiency and must be approved by the Project Administration Officer (PAO) or the SPD representative. *Do not enter any associated text in the task description.*

6. Section B.1.F. Flight Preparation Tasks. This category of work includes flight test requirements and associated movement of aircraft as a result of DM and is considered complete following final functional check flight. *Do not enter any associated text in the task description.*

7. Section B.1.G. Delivery Tasks. Tasks performed to ready the aircraft for final delivery to the using organization. Required movement of aircraft, outgoing inventory of equipment, refueling, servicing, and preflight are examples of tasks included in this category. *Do not enter any associated text in the task description.*

b. Section B.2. Negotiated Time Compliance Technical Orders. This section normally includes all TCTOs and modifications done concurrent with DM. The data in this section is optional for modifications and TCTOs that are not funded through the MRRB process. TCTO/modifications may be tracked in this section of the brochure for informational purposes only. Total DPSH per aircraft may be entered with a zero occurrence factor to prevent the DPSH from being reflected in the summary totals (Section C.1.).

Table 1-5. Sectionalized Work Requirements - Continued

c. Section B.3. Negotiated Maintenance. These tasks consist of organizational maintenance or inspections which have been determined by negotiations between the using command and the SM. They consist of those tasks which can best be performed during PDM. These tasks are ranked by priority of need by the initiator. Engine tasks will not be negotiated.

d. Section B.4. Special Depot Requirements. Other depot needs such as Speedline and special paint requirements will be shown in this section. DPSH breakout will be identified to those aircraft for which the tasks are required. Reflect total DPSH per each special depot requirement in this section and a grand total of all requirements per MDS in the summary section (C.1.). This section will not add cumulatively.

SECTION C. Summary Information.

a. Section C.1. Factored Hours Summary By MDS. This section shows the totals for the individual task sections by Mission/Design/Series (MDS). For ACI, hours are listed for annual tasks, annual fix, phased tasks, and phased fix. In the PDM area a total for section B.1. is provided with a breakout of each individual sub-section. Totals for the section B.2., section B.3., and section B.4. are also provided. The number of ACI aircraft entering depot shown here is taken from section A.6.B, schedule of ACI aircraft. The number of PDM aircraft is taken from the introductory title information area. Also shown are the total hours applied against all aircraft entering the depot. Each entry in the ACI section is multiplied by the number of ACI aircraft and each entry in section B.1., section B.2., and section B.3. are multiplied by the number of PDM aircraft. Section B.4. is a separate number of hours shown as a total.

c. Section C.2. Contract Summary by MDS and Command. This section reflects the number of existing planned contract programs, by MDS and Customer, in terms of estimated dollars. The dollars should be listed under PDM or ACI costs. If the costs are not broken out, simply enter the total for the contract under the PDM cost.

d. Section C.3. Recommendations/Comments. This area is used for anything else the SM would like to highlight for the board's attention. *Any future initiatives should be mentioned here as information only.*

INTERCONTINENTAL BALLISTIC MISSILE (ICBM) BROCHURE SPECIFICATIONS

a. Brochures for ICBMs having DM requirements are prepared showing the new FY being reviewed along with the two previous FYs.

b. Present PDM or other DM programs as follows:

(1) Section I. This section covers organic DM programs which include aging and surveillance, Rivet MILE, storage, transportation, etc.

(2) Section II. This section covers contract DM programs.

c. The above is minimum information required by the Air Force MRRB. Additional information can be added to clarify a point. The Database software will be utilized.

d. Out-of-cycle changes are in accordance with Figure 93C-6, Format for Program Change Requests, FMRS.

e. Task changes are explained at the end of each requirement.

f. The brochure cover will have the same distribution statement as shown in paragraph 93C-9a, FMRS.

g. When the brochure for a new FY is produced, DPSH on tasks will be compared to the previous FY's approved DPSH and deviations explained.

h. Back in/back out hours are presented during the MRRB for approval/disapproval.

Disposition of MRRB brochures and related data will be in accordance with AFMAN 37-139, Table 21-5, Rule 16.

THIS INPUT NEEDS TO BE FINALIZED BY ICBM SINGLE MANAGER AND APPROVED BY THE AF MRRB.

Table 1-6. CIE Sample Size

Force Size	CIE Sample Size
37-56	11
57-109	12
110-399	13

A CIE program is not accomplished for MDS force of 36 aircraft or less.

Table 1-7. ACI Sample Size

Force Size	Primary ACI Sample	Secondary ACI Sample
1-36	25% of force	an additional 25% of force
37-199	10	13
200 and over	11	13

Once a major or critical defect is found in the primary sample, the secondary must be inspected (making 24 aircraft for a 200 aircraft force) without finding another defect to be 90 percent confident that the defect existence is below a 20 percent prevalence level.

AIRCRAFT / MISSILE CONDITION DATA		DATE	PAGE	OF	PAGES
PART A	1. USING ACTIVITY ADDRESS	MAINTENANCE OFFICER			
		TYPE / PRINT NAME, GRADE, AND PHONE	SIGNATURE		
2. MDS		3. SERIAL NUMBER	4. SUB SERIAL NO.		
5. SCHEDULED INPUT DATA		7. HRS / MONTHS SINCE LAST POM	8. HRS / MONTHS SINCE NEW		
PART B	MAJCOM OPR ADDRESS				
LIST THOSE DEFECTS WHICH ARE KNOWN OR THOUGHT TO BE BEYOND USING ACTIVITY CAPABILITY BUT NOT IN THE DEPOT WORK PACKAGE					
MAJCOM OPR					
TYPE / PRINT NAME, GRADE AND PHONE			SIGNATURE		DATE
PART C	SPM ADDRESS				
LIST THE TASKS FROM PART B WHICH ARE APPROVED BY THE SPM					
SYSTEM PROGRAM MANAGER					
TYPE / PRINT NAME, GRADE AND PHONE			SIGNATURE		DATE
DATE PDM ACTIVITY ACCEPTED ADDITIONAL WORK					
DATE COPY OF COMPLETED FORM TO MAJCOM					
DATE COPY OF COMPLETED FORM TO USING ACTIVITY					
INSTRUCTIONS : SEE T.O. 00 - 25 - 4					

AFTO FORM 103, 19951201 (EF - V3)

PREVIOUS EDITION IS OBSOLETE

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Figure 1-1. AFTO FORM 103 Aircraft/Missile Condition Data

